



## PATENT ABSTRACTS OF JAPAN

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**B21D 28/24****B21D 28/00****B21D 53/84****F01L 1/18**(21) Application number: **2002225170**(71) Applicant: **OTICS CORP**(22) Date of filing: **01.08.02**(72) Inventor: **SUZUKI TOMOJI****(54) DEVICE FOR PUNCHING SHAFT HOLE IN  
ROCKER ARM**

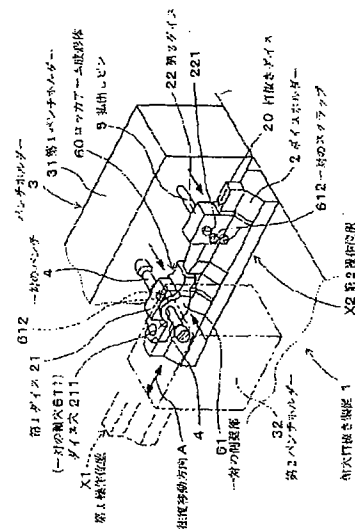
(図1)

**(57) Abstract:**

**PROBLEM TO BE SOLVED:** To provide a device for punching a shaft hole in a rocker arm for improving the productivity.

**SOLUTION:** A shaft hole punching device 1 of a rocker arm 6 comprises a die holder 2 having a first die 21 and a second die 22 and a punch holder 3 in which a pair of punches 4 to punch a pair of shaft holes 611 and a clearing pin 5 to clear a pair of scraps 612 from die holes 211 and 221 are disposed in an advancing/retracting manner. The die holder 2 is reciprocated with respect to the punch holder 3 between a first operational position X1 and a second operational position X2. At the operational positions X1 and X2, the pair of shaft holes 611 are punched in a rocker arm forming body 60 by the pair of punches 4 at one operational position, and the previously discharged pair of scraps 612 are cleared by the clearing pin 5.

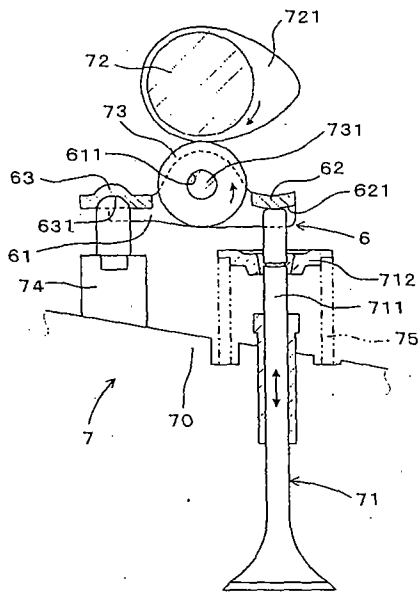
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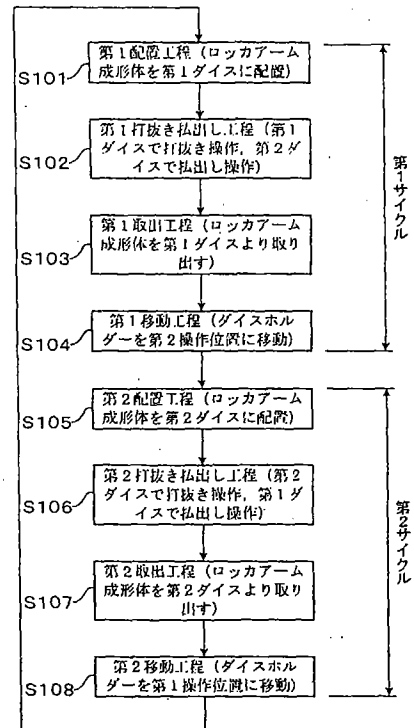
【図7】

(図7)



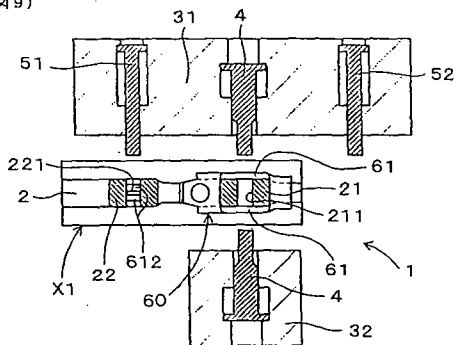
【図8】

(図8)



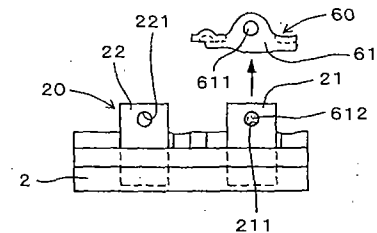
【図9】

(図9)



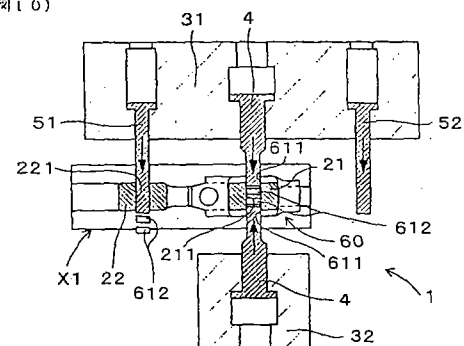
【図11】

(図11)



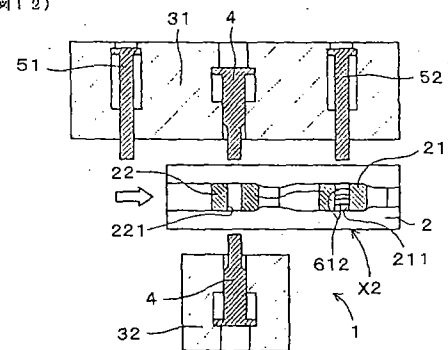
【図10】

(図10)



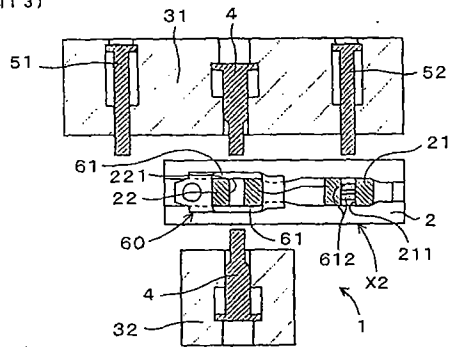
【図12】

(図12)



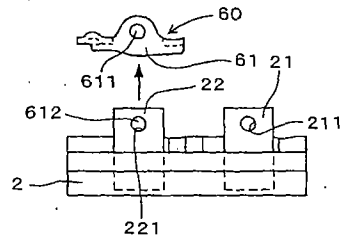
【図13】

(図13)



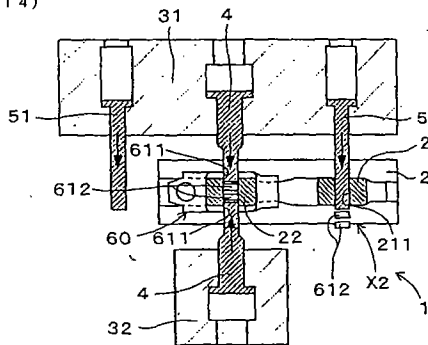
【図15】

(図15)



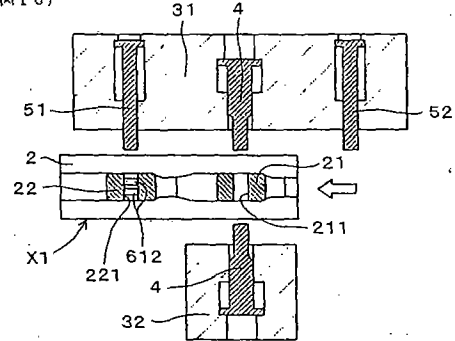
【図14】

(図14)



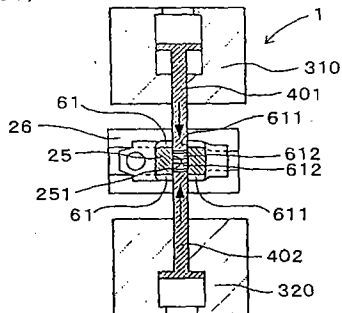
【図16】

(図16)



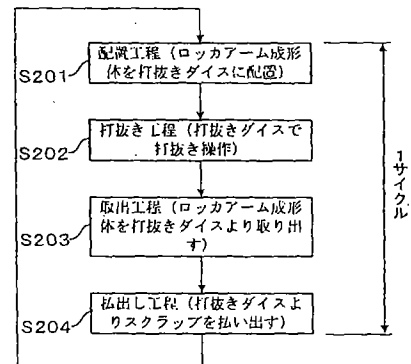
【図17】

(図17)



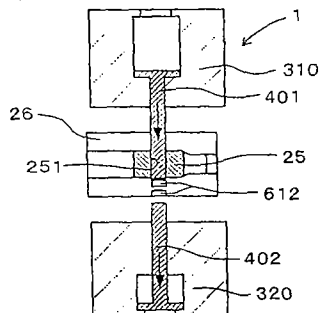
【図19】

(図19)

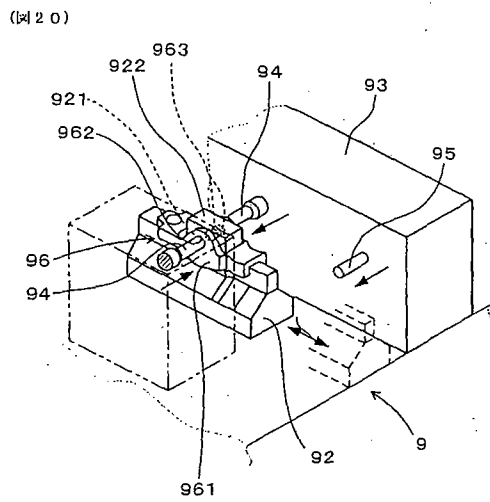


【図18】

(図18)



【図20】



【図21】

(図21)

